# Expert Review Panel
# Tour/Meeting Summary
# February 10, 2005

***Panel Members Present:*** Darlene Cimino-DeRose, Alan Kiepper, William Lorenz, Steve Ludin, Mike Meyer, Thomas Schmitt, Siim Sööt; Alonzo Wertz; John Howell (Panel Administrator)

## February 10 – Tour Day

The Panel took a bus tour of key corridors and locations in Sound Transit's three-county service area, guided by members of Sound Transit staff (David Beal, Art Borst, Jim Edwards, Paul Matsuoka, Matt Shelden, Andrea Tull, Mike Williams) and Seattle Monorail Project Board Chair Tom Weeks. The tour included:

- East King County corridor (I-90, SR- 405, downtown Bellevue, and SR- 520)
- Downtown Seattle Transit Tunnel
- King Street Station area
- LINK South locations, along the alignment from downtown to the airport
- High-capacity transit corridors on northern sections of Interstate 5 and State Route 99
- Monorail Green Line route

The day closed with a "Keyhole" (virtual aerial) tour of the region led by Paul Arnold of Sound Transit. This tour included land use patterns and population density, and transportation corridors and facilities throughout the three-county area.

### *East King County Corridor*

**I-90 Corridor**

Access to the Eastside is constrained by topography, the two floating bridges and the slow traffic at peak hours on both bridges. Eastside population is 680,000, with employment at 480,000. I-90 carries 156,000 vehicles per day. SR 520 is at capacity

High Capacity Transit (HCT) would go on the center lane of the I-90 bridge.
A fourth lane can be added by narrowing the existing lanes. The tunnel, overpasses and street crossings along I-90 on Mercer Island and elsewhere could create some challenges for a monorail design.

It is projected that the R-8 configuration in the I-90 corridor would reduce congestion to zero, from an estimated four hours per day. There was a question about the typical speed on I-90 at peak and non-peak times.

One bottleneck on I-90 is the interchange with SR 405. It can be a slow transition for both regular lanes of traffic and HOV lanes traveling between I-90 and SR 405. In general, the region does not have HOV lane to HOV lane connections at key highway interchanges. There is no HOV connection between SR 405 and SR 520. Sound Transit is looking at HOV/HOV connections at both 405/520 and 405/I-90 among the alternatives.
Consideration is being given to constructing flyover ramps to connect I-90 and 405.

Sound Transit staff said they would follow up on several questions that were asked by panel members.

Q: What is the level of transit and HOV use on the ramps that provide a transition between I-90/SR 405?
Q: What is the size of the reverse commute?
Q: What is the level of transit use in the reverse commute on I-90 and SR 520?

**Downtown Bellevue Transit Mall**

The operating philosophy of Sound Transit bus service is to provide express bus service all day, and two-way. All Sound Transit buses are operated by local transit operators, i.e. Metro in King County, Pierce County Transit, and Community Transit in Snohomish County.

Committee members remarked on the low volume of pedestrian activity in and around the transit mall. Staff responded that the transit mall was in the heart of the office core and that a low level of activity was not surprising at mid-morning. Staff mentioned that Bellevue has begun to encourage development of high density residential units on the edges of downtown. A question was asked about the number of units of high density housing in downtown Bellevue?

**Overlake Transit Center**

Microsoft has three times the office space as downtown Bellevue. There are 20,000 employees on the Microsoft campus, and the company is looking to add another 10,000. At the transit center Microsoft runs a 45 bus van fleet to take workers between transit center and offices.

There was a general conversation about direct access HOV projects. Two direct access HOV projects have been completed by Sound Transit, two are under construction and two will be under construction shortly. There are twelve direct access projects included in Sound Move, some of which may not happen because they will be infeasible.

**SR 520 Corridor**

Staff provided a description of the SR 520 corridor study/bridge replacement project. A new bridge will likely include dedicated space for high capacity transit. The SR 520 corridor handles in excess of 100,000 vehicles per day, with no breakdown lanes. A high volume of congestion is common.

Population within Sound Transit district is 2.6 million, that is half of population of state. Sound Transit district boundaries were created at same time as State Growth Management Act, which attempts to focus growth in urban areas.

### *Downtown Transit Tunnel*

The downtown tunnel is 1.3 miles long and handles 70 buses each direction during peak hour volumes. The tunnel will be closed in September 2005 to retrofit for light rail. The tracks need to be removed and lowered to accommodate low floor transit vehicles. It will be closed for 24 months. It will be the only bus tunnel in the world with joint operations: light rail and bus. When the tunnel is operational for join operations there will be a one tunnel separation (from one

station to the next) between trains and busses. With joint operation the tunnel will run 60 buses at peak (as opposed to 70 buses today).

### *King Street Station*

Sound Move included construction of Sounder commuter rail, on 82 miles of track, south between Seattle and Lakewood, and north between Seattle and Everett. The Sounder system is currently operating eight trains per day between Seattle and Tacoma, in Pierce County. Ultimately Sound Transit plans on having 18 trains running south. The Sounder spur from Tacoma to Lakewood is under design, and is at 30% design.

Today they are running two trains per day between Seattle and Everett. In 2006/2007 they plan on running eight trains per day north to Snohomish County. The Sound Move Plan called for twelve trains per day to Everett. This will not be achieved because the cost of the agreement with Burlington Northern Santa Fe Railroad (BNSF) for use of the tracks was much greater than anticipated.

Ridership on Sounder is currently 4,300 – 4,500 trips per day – for service both north and south. Fare collection for Sounder is unmanned.

### *Airport Link Light Rail Alignment*

The tour travelled the route of the Link Light Rail project, currently under construction. The light rail line will run from Convention Place Station in downtown Seattle to SeaTac Airport. It will take 30 minutes to get to the airport.

A Panel member asked a question about the interface with monorail and the light rail line. The closest location for that Link will be the Stadium, where the monorail will have a stop on the west side of the stadium and the light rail line will have a stop on the east side of the stadium.

The Sound Transit Board made a recent decision to add construction of Royal Brougham Station (near Safeco Field and Qwest Stadium) to the project. There are approximately 10,000 jobs within close proximity to the Lander Street Station. The operation and maintenance base at Lander will be able to store 160 light rail cars. The soil at the Lander Street maintenance base is very unstable. Sound Transit has had to drive 1,200 pilings.

A tunnel is being constructed underneath Beacon Hill. It will be a double bore tunnel. The boring machine in being constructed overseas and will be delivered in March. The Beacon Hill Station will be 150 feet deep. The soil is old glacial till, which is very difficult to work with. The soil is not consistent: some sand, some peat, etc. A great deal of water came into the test shaft at the Beacon Hill station site. They have had to use slurry walls to solve the problem. The test shaft cost $2.5 million.

All portions of South Link have been bid except the Tukwila section. At this time, they are within $400-$500,000 under budget. The Tukwila bid opening is February 15, 2005.

Sound Transit has purchased 400 parcels of property in the Rainer Valley, from McClellan St., five miles south to the Boeing Access Road. There are 19 crossings at grade through the Rainier

Valley. The speed of the light rail trains through the valley will be 35 miles per hour. Traffic signals will be set so the trains should not have to stop except at stations. The Rainier Valley is an area of high transit use. The four stations are about one mile apart. One hundred and fifty (150) houses will participate in a sound insulation program. There will be a turn back track at Henderson St., in the southern portion of the valley.

Sound Transit has spent an extra $50 million to redesign the alignment, moving from Tukwila Boulevard to the Tukwila freeway alignment. The City of Tukwila is attempting to redevelop portions of Tukwila Boulevard and did not view the light rail line as compatible with those plans. Tukwila had wanted light rail to go through South Center Mall, a major regional shopping center to the east of the freeway. In order to secure the City of Tukwila's approval, $1 million in noise abatement requirements were added to the project. The International Boulevard Station, at 154th Street is the only park-and-ride station along the Link alignment. 5,000 boardings are projected for this station.

At the airport the station will be 1,000 feet away from the terminal because there was not sufficient space between existing facilities to get closer.

### *North Corridor*

This is strongest transit corridor for transit in region. It had been hoped that Northgate would be the planned northern terminus for the first phase of the Link light rail. However, the voter approved Sound Move plan stated that the light rail line would be extended from the University District to Northgate if funds were available. The designs for extending light rail to Northgate are 30% complete.

Sound Transit is planning to extend light rail north of Northgate just east of I-5. Navigating the overpasses and on/off ramps along I-5 will be challenging and costly. They are considering a potential large park-and-ride lot at 145th Street, the northern boundary for Seattle. The City of Shoreline is in agreement with that idea. There is a potential for a stop at 175th Street.

There has been tremendous growth in south Snohomish County during the past decade. The Lynnwood park-and-ride lot is the heaviest used park-and-ride in the state. Lynnwood, Everett and Canyon Park are three designated urban centers in Snohomish County. Lynnwood has plans to develop its downtown core adjacent to the existing transit mall. Lynnwood officials have an interest in a downtown light rail circulator. Estimated running time on light rail from Seattle to Lynnwood would be 35 minutes, and to Everett it would be 60 minutes. Downtown Lynnwood zoning density has been increased to allow 40-50 feet buildings.

Most service enhancement in this Lynnwood, South Snohomish County area has been increased bus service in Phase One of Sound Move. SR99 is a potential light rail corridor, particularly within King County. The SR99 corridor has the fifth highest ridership within Metro's (King County) service area – approximately 8,000 riders per day. There are 4,000 riders per day in the Snohomish County SR99 corridor. SR99 and I-5 are two corridors where HCT transit has been studied since the 70s. Most studies have suggested that HCT would have to be grade separated to be effective. The primary alternative for the SR99 corridor is BRT, with HOV lanes – Business access and transit lanes (BAT lanes).

### *Northern Monorail Alignment*

In 2000 the Elevated Transportation Company (ETC) was created when voters approved $6 million to do two years of planning. Voters wanted to have an integrated system that provided bus, light rail and heavy rail. The ETC's Green Line Plan, from Ballard to downtown and to West Seattle, was meant to be noncompetitive with Sound Transit. Lots of work has occurred on integration.

In 2002 a third vote on the monorail was held, this time to create an entity to build and operate the monorail, and to tax citizens. It was approved at an estimated cost of $1.7 billion. The vote guaranteed that the ETC will build 14 miles or none at all. There is a cap of $1.5 billion (in 2002 $) in borrowing capacity. The vote also stipulated that the ETC could subsidize operation through 2020, using motor vehicle excise tax (MVET), but after 2020, MVET subsidy is not allowed. They do not believe farebox revenue will be sufficient so they are looking at other revenue generating possibilities. They think farebox revenue in 2025 would support about 62% of operating expenses.

The monorail trains will run every 3-5 minutes during peak times. It will be a driver-less system. There will be 14 miles of track and 19 stations. Stations will be are ½ mile apart in downtown core. They will be closer together than Sound Transit light rail stations. A number of the stops will be at major attractions downtown and at Seattle Center. The ETC decided not to have park-and-ride lots at their stations. The City wants to encourage greater density around stations rather than lower density development with parking lots.

The ETC has suggested potential partnership with Sound Transit on the SR 522, SR 99 and SR520 corridors. The most likely Second Phase of monorail construction would extend the Green Line to the east, to Northgate and to Lake City.

Superstructure columns will be concrete. Column width will be 110 to 115 feet apart. The track will be 30 feet high. The distance between standard columns will be four feet. There will be a walkway the entire length adjacent to the track, between the tracks, that can be used in case of emergency. Computer technology will allow trains to run every two minutes. They are planning for two and four car trains. 2020 ridership is expected to be 69,000 trips per day. They expect heaviest ridership between Seattle Center and downtown.

The end of line station will be at 85th Street and 15th Ave. NW for Phase One. Most of the required right-of-way is existing right-of-way except for the stations. The ETC is negotiating with the City to allow parking between columns.

The second stop at will be at 65th Street and 15th Ave. NW. The third station will be at Market Street. One of the most challenging aspects of the design of the Green Line is the ½ mile crossing at the Ship Canal. The monorail will be 125 feet high and will not open. The fourth station will be at Dravus. The ETC is purchasing the former site of the Northwest Center, for their maintenance base.

When the alignment gets to Elliott Ave. it will be in the median strip in the center of the roadway. There will be a station at Elliott and Mercer. Coming up Harrison Street the monorail

will take out an existing lane of parking. There will be two stops at Seattle Center. The existing monorail that runs from Seattle Center to Westlake Mall, will be replaced with new track. The existing columns will be moved from the middle of the street to the sidewalk. They will have to remove existing street trees and plant new ones that grow less than 35 feet in height.

The monorail will go down the west side of Second Avenue. There will be stations at the Federal Reserve building and at the "Sinking Ship Garage", at 2nd and Yesler. There will be links with light rail at Pioneer Square, Westlake, and Stadiums/King Street. They are exploring whether service will be free downtown (like the current bus service). Tom Weeks suggested it is unlikely that service will be free, but the decisions have not been made.

To get to West Seattle the columns will be built on the West Seattle Bridge. West Seattle has one primary corridor in and out of downtown and it gets very congested.

The ETC is negotiating a design, build, operate contract with one contractor. The bid would include five years of operation, with an option for another five years. They hope construction will start this summer with opening expected in 2009.

The ETC board has two directly elected members, two appointed by the Mayor, two appointed by the City Council, and three appointed by the board. They have studied the Las Vegas Monorail experience, and other monorail systems around the world. They have learned from experience not to force car manufacturers to do something they cannot do. They are also learning about entrepreneurial revenue strategies.

### *Keyhole Virtual Tour*

**Boundaries and mission.** Sound Transit was created in 1996 when voters in urban areas of King, Pierce and Snohomish counties approved local taxes for the system. The agency's mission is to build and operate a regional mass transit system connecting the three-county Sound Transit district. The district's boundaries generally follow the urban growth boundaries that each county created under the state Growth Management Act. The current population in this area is 3 million. By 2020, the population is expected to increase to 4.2 million.

The Sound Transit district is organized into five geographic subareas:

- Snohomish County
- North King County
- East King County
- South King County
- Pierce County

Sound Transit follows a principle of "subarea equity," which assures that taxes raised in each subarea are used for capital projects and operations that directly benefit that subarea.

**Current system.** Sound Transit's current system includes a mix of mass transit improvements:

- High-occupancy vehicle (HOV) lane access improvements;
- 19 ST Express bus routes;
- Sounder commuter rail from Everett (Snohomish County) to Lakewood (Pierce Coundy); and

- Link light rail, with a 1.6-mile downtown Tacoma Link segment, and a 14-mile Central Link route under construction that will run from downtown Seattle to Seattle-Tacoma International Airport.

The system also includes new park-and-ride lots and transit centers. This system now carries approximately 36,000 riders a day.

**Next phase.** With the groundbreaking for the Central Link light rail, the majority of Sound Transit's Phase 1 projects are complete or underway. Sound Transit is now planning for its next phase of regional projects, called Sound Transit 2. This second phase will address transportation needs through 2030.

Sound Transit released a Draft Supplemental Environmental Impact Statement (SEIS) to its Long-Range Plan in December 2004. The draft was open for public comment through January 31, 2005. Based on the final SEIS, Sound Transit will issue an updated draft Long-Range Plan for public comment. After the Board adopts the Long-Range Plan, Sound Transit will work with the public and the Board to identify priorities for Sound Transit 2. The current schedule calls for the Board to adopt a Sound Transit 2 Plan and bring a package to the voters in 2006.

In the virtual tour, Sound Transit staff reviewed the corridors seen early in the day by bus, and discussed the possible corridors and transit modes for expanding and connecting the system as part of Sound Transit 2.

One Panel member asked why Sound Transit is considering a tunnel for the northern extension of the light rail system. Sound Transit staff explained that the northern route involves a steep hill and dense population area with narrow streets and a limited right-of-way. The tunnel would be approximately 5 to 6 miles long.

➢ ***Request:*** Please provide the Panel with an estimated cost per mile for the tunnel, based on costs for the Beacon Hill tunnel if there are not yet cost estimates on the northern tunnel.

In response to a question as to whether Phase I funding has a time deadline, Sound Transit staff said that the plan was originally scheduled to be complete in 2006, but funding could be stretched to 2009. Any funding extensions would need to follow the principle of subarea equity, however.